PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Low Health Literacy and Cancer Screening among Chinese Americans in California: A Cross-Sectional Analysis
AUTHORS	Sentell, Tetine; Tsoh, Janice; Davis, Terry; Davis, Jim; Braun, Kathryn L.

VERSION 1 - REVIEW

REVIEWER	Sheila Castaneda San Diego State University, USA
REVIEW RETURNED	25-Jul-2014

GENERAL COMMENTS	1. From reading the abstract it is not clear how low health literacy was measured. This construct can be measured in several different ways and it would be helpful to know how it was measured and in what language. Was the measure validated in Mandarin/Cantonese? 2. It would be helpful to report the results by gender for CRC screening in the abstract. 3. Did you examine results stratified by language of interview? This may be needed. 4. Are there other acculturation variables, such as years in the US, you could include and control for? 5. I would also control for recent physician visit or having a primary care provider (something that assesses access to care besides having health insurance). 6. Can you please clarify what census data you used to weight the data? 7. Can you please add a bit on the sampling design of the CHIS study. 8. In the discussion you mentioned that LHL is associated with only breast and CRC screening; however in the abstract you mentioned that LHL is related to breast and cervical screening and that LHL + LEP is related to CRC screening. Please clarify what interpretation is correct.

REVIEWER	Jonathan VanGeest Kent State University, USA
REVIEW RETURNED	15-Sep-2014

GENERAL COMMENTS	The article is well-written and timely. The review of the literature is excellent and up-to-date. Finally, the conclusions drawn from the analyses are appropriate, with limitations clearly stated. The only potential area that could be strengthened is the potential link between LEP and cultural competency. Culturally competent healthcare systems area those that provide both culturally and linguistically appropriate services. The Taskforce on Community

	Preventive Services looked at both language and culture in health care deliver, ultimately arguing for both culturally and linguistically appropriate services as a means to reduce disparities (see Anderson et al. Am J Prev Med 2003;24:68–79). Discretionary Revisions: Methods (Low health literacy): Recommend that the authors include text supporting the use of single item assessments such as those utilized in the CHIS consistent with discussion of measured used for limited English proficiency in the following paragraph. Discussion: See note on culture above. Research on cancer-related beliefs indicates that some Chinese people believe cancer is contagious or that it is due to tragic luck. Attitudes such as these may impede decisions related to screening, especially among those with limited understanding of the U.S. medical system (for which LEP may be a proxy measure). Minor Essential Revisions: None Identified Major Compulsory Revisions: None Identified Recommendation: Accept after discretionary revisions

VERSION 1 – AUTHOR RESPONSE

Reviewer Name Sheila Castaneda
Institution and Country San Diego State University, USA
Please state any competing interests or state 'None declared': None declared

1. From reading the abstract it is not clear how low health literacy was measured. This construct can be measured in several different ways and it would be helpful to know how it was measured and in what language. Was the measure validated in Mandarin/Cantonese?

We have included detail in the abstract about both the measurement of health literacy and the languages in which the health literacy items were asked. We were not able to go into more detail about this measurement in the abstract due to the 300 word limit. However, we have also added a little more detail about this topic into the methods on the last full paragraph of pg. 6.

In the limitations section (in second paragraph on pg. 13), we note that, to our knowledge, self-reported health literacy items have been validated in English speakers and considered in some detail in Asian groups outside the US, but have not been validated specifically in Chinese Americans. We mention that it would be useful to do this, particularly to consider differences in self-reporting health literacy challenges across Asian groups in the US, due to potential cultural differences in responses to questionnaires.

2. It would be helpful to report the results by gender for CRC screening in the abstract.

We have included this detail in the abstract: 47.9% of Chinese women and 54.2% of Chinese men met CRC screening guidelines in both the abstract and the results section (pg 9, top of the page).

3. Did you examine results stratified by language of interview? This may be needed.

This is a great idea. However, this variable, is highly associated with LEP, which is a critical study variable, and when added to multivariate models, the Chinese language variables were not significant

in any model. We thus included LEP as our language indicator rather than specific Chinese languages, especially as we did not have any a priori hypotheses about the screening disadvantages of particular Chinese languages (but we did have expectations about the barrier of LEP). We added a footnote on pg 7 in the methods section that we tested other potential control variables, including language of interview (English vs. Cantonese or Mandarin), but that these were not included in final models. We do believe analyses on this topic would be fruitful given a larger sample size that would allow for the untangling of the specific relationships for tightly associated factors such as LEP and specific Chinese language along with provider language concordance, birthplace, and access to care. We have thus added a sentence about this to the limitations section (end of page 13 and top of page 14).

4. Are there other acculturation variables, such as years in the US, you could include and control for?

The 2007 CHIS does have years in the US. However, the majority of Chinese respondents were either born in the US or have been here for a decade or more. While those who are new the US are certainly more vulnerable, their numbers in our sample are so low that we lack power to untangle the role of time in the US from other key study variables, especially LEP and being born in the US, to the point that some of the models do not converge when time in the US variables are included. Again, we note in a footnote on pg 7 in the methods section that we tested other potential control variables, including years in the US (<5 years, 5-10 years, 15+ years) for those born outside the US, but that these were not included in final models. We also mention this issue in the limitations section (end of page 13 and top of page 14).

5. I would also control for recent physician visit or having a primary care provider (something that assesses access to care besides having health insurance).

We very much appreciate this suggestion. We tested final models including both having a recent physician visit along with having health insurance and this factor was both distinct from our key study variables and highly significant in multivariable models. Thus, we have revised the manuscript based on this additional analysis. This update can be found in the abstract, methods (pg. middle of page 7), the results (pg. middle of page 9 and page 10), the discussion (pg. bottom of page 10; top of page 12), and all the tables. We agreed that it is a very important to include recent physician visit in the model to allow for a thorough test of our health communication variables in prediction of cancer screening.

Including the doctor visit variable particularly impacted our cervical cancer screening model, reducing the significance of the health literacy variable in Table 2 in this model. (Health communication variables remained significant for breast and colorectal cancer screening above and beyond having a MD visit.) Access to health care is associated with low health literacy. Thus, seeing a doctor may be a mediator between low health literacy and getting cancer screenings. This could perhaps be part of the effect of low health literacy, which may be interesting to consider in our future work.

6. Can you please clarify what census data you used to weight the data?

We have added more detail about the weights in the methods (middle of pg. 8). The weights are provided in the public-use data file. Population-total weighting information is derived using data from the California Department of Finance's 2007 Population Estimates and 2007 Population Projections across 11 demographic, geographic, household composition, and socio-economic factors.

More extensive detail can be found online at:

http://healthpolicy.ucla.edu/chis/design/Documents/CHIS2007_method5.pdf

This resource is now cited in the text.

7. Can you please add a bit on the sampling design of the CHIS study.

We have added more detail about this on pg. 5 in the methods. We state that:
“The CHIS is a random-digit-dial (RDD) telephone survey administered by UCLA Center for Health Policy Research. It is representative of the non-institutionalized population of California, which is home to 4 out of every 10 Asian Americans in the US (28). The 2007 CHIS multi-stage sample design included landline and cellular telephone numbers (29). For the landline RDD sample, the state was divided into 44 geographic sampling strata from which residential telephone numbers were selected. Within each household, one adult (18 years and over) respondent was randomly selected. The separate RDD cellular sample was drawn from telephone numbers assigned to cellular service and stratified by area code (29).”

More information is available at:
http://healthpolicy.ucla.edu/chis/design/Documents/CHIS2007_method2.pdf

We now cite this resource in the text.

8. In the discussion you mentioned that LHL is associated with only breast and CRC screening; however in the abstract you mentioned that LHL is related to breast and cervical screening and that LHL + LEP is related to CRC screening. Please clarify what interpretation is correct.

LHL was only marginally related to cervical cancer screening after adding the ‘recent’ doctor visit variable so these discussions are now revised.

Reviewer Name Jonathan VanGeest
Institution and Country Kent State University, USA
Please state any competing interests or state ‘None declared’: None Declared

General comments:

The article is well-written and timely. The review of the literature is excellent and up-to-date. Finally, the conclusions drawn from the analyses are appropriate, with limitations clearly stated. The only potential area that could be strengthened is the potential link between LEP and cultural competency. Culturally competent healthcare systems area those that provide both culturally and linguistically appropriate services. The Taskforce on Community Preventive Services looked at both language and culture in health care deliver, ultimately arguing for both culturally and linguistically appropriate services as a means to reduce disparities (see Anderson et al. Am J Prev Med 2003;24:68–79).

Thank you for this important point. We have added a discussion concerning this issue on the first full paragraph on pg. 13.

Discretionary Revisions:

Methods (Low health literacy): Recommend that the authors include text supporting the use of single item assessments such as those utilized in the CHIS consistent with discussion of measured used for limited English proficiency in the following paragraph.

We have added a sentence about this on pg. 6.

Discussion: See note on culture above. Research on cancer-related beliefs indicates that some Chinese people believe cancer is contagious or that it is due to tragic luck. Attitudes such as these may impede decisions related to screening, especially among those with limited understanding of the U.S. medical system (for which LEP may be a proxy measure).

This is a good point. We have added information about this to the discussion on page on pg. 13.